

## ACS PRF UNDERGRADUATE RESEARCH (UR) GRANT

The following comments are presented to assist you in the preparation of a proposal for an Undergraduate Research grant. See also **ELIGIBILITY, TERMS, CONDITIONS and GUIDELINES**. Only faculty with appointments in **departments that do not offer the doctoral degree** are eligible for Undergraduate Research grants.

**Nature and Scope of the Research:** American Chemical Society Petroleum Research Fund (ACS PRF) research grants are made to non-profit institutions for regularly appointed faculty whose research may be sponsored in accordance with the Agreement of Transfer of Trust:

“The recipient (ACS) shall use all funds exclusively for advanced scientific education and fundamental research in the ‘petroleum field,’ which may include any field of pure science which in the judgment of (ACS) may afford a basis for subsequent research directly connected with the petroleum field.”

The ACS PRF Undergraduate Research (UR) grants program is intended to provide research support for scientists and engineers who are faculty members in non-doctoral departments. UR grants enable a Principal Investigator to initiate a **new** research direction, which is different from previous research performed by the PI, and not a logical extension of previous studies. UR grants provide financial incentives for students at those institutions to become involved in research activities leading to employment or continued study in graduate school. ACS PRF will not support a proposal having overlap, or partial overlap, with research funded by another agency.

Note that fundamental research is required as opposed to applied research or methods development. All UR proposals will be reviewed for the following required elements: **completeness and correctness of the application, fundamental nature of the research topic, relevance to petroleum or fossil fuels, and description of the impact on advanced scientific education of students.**

**Funding Criteria:** The PRF Committee makes relative rankings of proposals, and recommendations for funding, based on the following criteria:

- The overall quality, significance, and scientific merit of the proposed research, including the extent to which it will increase basic knowledge and/or stimulate additional research. Included in this assessment is a measure of the likelihood that the stated scientific goals will generate publishable results.
- The extent to which advanced scientific education will be enhanced through the involvement of students in the research, and will encourage students to pursue careers in scientific or engineering fields.
- The extent to which the proposed research represents a new or independent area or aspect of investigation for the lead principal investigator, consistent with the goals, resources, and environment of UR institutions.
- The impact of funding the research, including the effect on the principal investigator’s overall research program.
- The qualifications or potential of the principal investigator and adequacy of the facilities to conduct the research. Proposals from institutions with little or no tradition of research will benefit from statements of institutional support, limited to one page, and attached to the end of the proposal.
- All Principal Investigators must describe any significant risks or hazards that may be encountered in the proposed work, and how these risks or hazards would be mitigated.

**Eligibility:** Only faculty members with appointments in departments that **do not offer a doctoral degree** are eligible for Undergraduate Research grants. To be eligible as a principal investigator for a UR grant, applicants must meet **all three** of the ACS PRF eligibility criteria:

1. The non-profit institution submitting the proposal must certify that the individual listed as principal investigator on the cover page qualifies as a principal investigator under the institution’s policies.
2. In view of the long-standing policy of ACS PRF to give priority to support of students (undergraduate or master's degree), the principal investigator must be eligible to serve as the sole formal, official supervisor of undergraduate students.
3. The term of appointment of the principal investigator must promise reasonable continuity of service. The appointment must continue at least through the period of funding requested in the proposal.

It is assumed that tenured or tenure-track faculty meet these criteria. If you are not tenure-track, include a letter from your Department Chair verifying that you meet all three of the ACS PRF eligibility criteria. One co-principal investigator (co-PI) is permitted on a UR grant proposal. The co-PI must meet the same eligibility criteria as the lead PI and provide the same information requested of the lead PI in the application. The lead PI (who should be denoted as such on the proposal) and their institution (designated as the grantee institution) would subcontract the co-PI through the co-PI’s institution. Any

number of collaborators may participate on the project, but no funds from a UR grant may be used to support collaborators or their respective students.

**Budget:** The PRF Committee requires that at least 40 percent of the total budget be devoted to support the education and training of students. See item 4 below for details. A budget justification is required in the online application. If you have any questions about allowable budget allocations, please contact the appropriate Program Manager before submitting a proposal. For proposals that are funded, the budget becomes part of the grant agreement. Revisions to the grant budget can only be made **with prior approval** of ACS PRF.

1. **Request:** Proposals request \$70,000 for three grant years. The total budget may be divided among years according to the needs of the project. The normal ACS PRF budget year extends from September 1 to August 31. The first grant year may begin earlier than September 1, but must start on the first day of a month and end on August 31 of the following year. **A starting date earlier than September 1 will result in a first budget period longer than twelve months.**
2. **Excluded Charges:** No overhead costs may be charged. Secretarial and/or administrative salaries are considered part of regular departmental expenses and should not be included in proposed budgets or charged against the grant. Funds **may not** be used for tuition or to support postdoctoral fellows, doctoral students, laboratory technicians, contractors, consultants, or visiting faculty.
3. **Principal Investigator Stipend:** The proposed budget may include a contribution for PI summer salary, with an upper limit of \$8,000 per grant year, **including fringe benefits and the salary of the co-PI (if any)**, to a maximum of \$24,000 for the grant. This limit **does not** change as a result of time extensions. Summer salaries or contributions thereto are not provided for principal investigators in colleges or universities outside of the United States and its possessions.
4. **Support of Students:** Total student support, as salaries or stipends, must be at least 40% of the grant budget. Grant funds **must** be used to support undergraduate students **in each year** of the funded research, and M.S. students may also be supported. Field Work expenses for students, including transportation, lodging, etc., may be considered student support, and must be described in the budget justification.
5. **Travel:** A maximum of \$2,000 per grant year, or \$6,000 total, may be budgeted for conference travel. This limit does not change as a result of time extensions. Support of student travel to scientific meetings is encouraged. Note that scientific work performed away from the home institution is considered field work, and is budgeted separately.
6. **Capital Equipment:** Requests for capital equipment on UR grant proposals **are discouraged**. However, a limited amount of capital equipment funds ( $\leq$  \$5,000) may be included in the proposed budget, with justification and description of institutional cost-matching (if any) in the budget justification.

**Carryover and Time Extensions:** Funds that are unexpended at the end of an annual grant period may be carried forward into the next period in the same budget category. If unexpended funds remain in the grant account at the expiration of the original grant period, an extension of time without commitment of additional funds may be requested. A maximum of two one-year time extensions may be approved provided reporting requirements are up to date.

### **Proposal Submission:**

1. **Format:** A complete proposal consists of the following material, submitted through the submission website for UR proposals at [www.acsprf.org](http://www.acsprf.org):
  - a. Web-Submitted Information: The following information is entered as part of your online application, on the proposal submission website: Signature pages, budget and budget justification; education and experience; current and pending research support; publications and presentations: safety statement; suggested reviewers; collaborations, abstract and technical proposal.
  - b. Signed Pages: A cover page and a budget page are generated from the information entered by the applicant for signatures of the Principal Investigator and the Institutional Representative. The applicant must download the pages, obtain all signatures, and upload the signed documents into the system. If the proposal is funded, the budget will become the approved grant budget. Any revisions to the approved budget require prior approval of PRF.
  - c. Technical proposal: The technical proposal is submitted as a single PDF file, including the scientific text of the narrative, references cited, figures, and tables. The text body may not exceed 4,000 words, double-spaced, in 12-point font (Times Roman, Arial, or Courier), with 1-inch margins, with a word count entered at the end of the proposal narrative. The word count does not include the 250-word abstract, figures, and references.
2. **Page Order:** Number the pages of your proposal in the footer, with the abstract as Page 1. No institutional cover letter is required; if one is included, please place it after the references.
3. **Length Restrictions:** The PRF Committee has set an upper limit of 4,000 words, double-spaced, in 12-point font (Times Roman, Arial, or Courier), with one-inch margins, for the scientific text of the narrative portion of the technical proposal. The word count excludes the abstract, figures, and references, and is entered at the end of the proposal narrative. Proposals that exceed this limitation will not be considered. The abstract should not exceed 250 words.

4. **Limitations:** An investigator (lead PI or co-PI) may have only one active ACS PRF grant, or proposal under consideration, at any time. In addition, principal investigators (lead PI or co-PI) may have only one UR proposal considered in a 12-month period. Thus, a principal investigator (lead PI or co-PI) who has an Undergraduate Research proposal denied may not submit another UR proposal until the PRF Committee meeting one year later.
5. **Safety Statement:** All principal investigators must describe any significant risks or hazards that may be encountered in the proposed work, and how these risks or hazards would be mitigated. Web links to relevant references, and examples of risk assessments and mitigation strategies, are at [www.acsprf.org/safety](http://www.acsprf.org/safety) and also on the PRF Website.
6. **Additional material:** If this is a resubmission of a previously denied proposal, you will need to answer the question, **“What has been changed in this revised version?”** in the online submission form. This information is just for the use of the Program Manager and the PRF Science Panel members, so it is **not** to be included in the proposal document. “Revised and resubmitted” proposals are sent to a different set of reviewers than those asked to evaluate the initial proposal.

Principal Investigators must keep the ACS PRF office advised of the status of applications for research support at other agencies while your proposal is under consideration by The ACS Petroleum Research Fund. The ACS Petroleum Research Fund reserves the right to scan proposals for plagiarism.

### **Checklist of Common Errors - Please Review Carefully Before Submitting a Proposal**

Most unsuccessful proposals have problems with one or more of the following criteria. If in doubt, please call ACS PRF (202-872-4481) or email the appropriate Program Manager well before the submission deadline. Program Managers and their email addresses are listed on the “Contact PRF” page of our website ([www.acsprf.org](http://www.acsprf.org)).

1. **Topic outside the scope of ACS PRF.** Research topics within all areas considered by the PRF Committee are listed in the “PRF Science Panels and Areas of Research Support” page of our website ([www.acsprf.org](http://www.acsprf.org)).
2. **Missing or insufficient statement of petroleum relevance** (*i.e.*, How is the proposal “advanced scientific education and fundamental research in the ‘petroleum field’?” **with the definition of ‘petroleum field’ in the downloadable “Agreement of Transfer of Trust” document.**) This petroleum relevance statement is entered on the online submission page before the technical proposal is uploaded.
3. **Incomplete application.** All proposals must be received, in complete and final form, by the stipulated deadline. No late submissions, additions, or document substitutions are allowed after the deadline. Proposals submitted in February-March will be considered at the October PRF Committee meeting; submissions in September-October will be considered in May of the next year.
4. **Proposal budget for the wrong amount (must be \$70,000).** If necessary to make the total request equal this amount, add the “extra dollars” to the student support categories, or to the Supplies and Services budget.
5. **Insufficient student support.** The PRF Committee requires at least 40 percent of the total budget be devoted to support the education and training of students (undergraduate research assistants, Master’s students).
6. **Principal Investigator salary over the maximum allowable amount of \$8,000 per year (this amount includes fringe benefits and the salary of the co-PI, if any).** The limit on PI Salary does not change as a result of any no-cost time extensions.
7. **Travel budget over the maximum allowable amount of \$2,000 per year.** This is travel to meetings or symposia to present research results. Travel to obtain data is part of the “Field Work” budget category.
8. **Proposal longer than 4,000 words, double-spaced in 12-point font.** The word count is entered at the end of the proposal narrative. Proposals that exceed this limitation will not be considered.
9. **Missing information for PI or co-PI.** For each PI (and co-PI), include all academic degrees, institution and date received, the name(s) of the dissertation director(s) of the PI, and any post-doctoral supervisor(s), if appropriate.
10. **Missing or incomplete information on suggested reviewers.** Include the names, organizational affiliation, and email addresses of at least six peer experts who are qualified, willing to take the time to evaluate the proposed research, and have no conflicts of interest with the PI (and co-PI, if any). This information is required on both the application form and the online submission form.
11. **Missing signatures.** The signatures of the PI, the co-PI (if appropriate), and an authorized official of your institution are required on both the title page and the budget page. The institutional official is the person who is

authorized to commit the PI's institution to performing the proposed research, and is not the Department Chair. **All signatures are required on both pages.**

12. **Incomplete reference citations.** Include the names of all authors, complete article title, journal title, year of publication, volume number, and pages of cited article. **Do not use "et al." in reference citations.**
13. **No outline of revisions.** For a previously denied proposal, which has been revised and resubmitted, the PI did not address reviewers' concerns/comments and did not include, with the application, a summary of major changes.
14. **Safety statement missing.** Principal Investigator has failed to provide required risk assessment and mitigation strategies in their proposal.

### Guidelines for Text of the Proposed Research

The scientific text of the proposal should conform to the following guidelines:

- A. The first section of the proposed research should be an abstract of no more than 250 words. **(The abstract is also entered as part of your online application, on the proposal submission website.)** The abstract should present the rationale of the research, its scientific objective, and an estimate of the significance to the field of research if the objective is reached.
- B. The body of the narrative should expand upon the salient points presented in the abstract. In addition, it should provide an introduction of the proposal topic, a detailed description of the research plan, including tables and figures, and a survey of pertinent literature (see Part D below), and any non-scientific matters which require explanation (for example, plans for access to specialized equipment, required field studies, etc).
- C. Please number the pages of your proposal in the footer, with the abstract as Page 1. Print the **word count** of the proposal narrative (Proposal Narrative = *nnnn* words) at the end of the proposal narrative, before the reference citations.
- D. For reference citations, include the **names of all authors**, complete article title, journal title, year of publication, volume number (if any), and pages of cited article. **Do not use *et. al.*** For example:
  - a. Dunn, D.A., Lee, B.I., Fahr, A., and Clancy, T.C., Characterization and Analysis of Oil-Shale Kerogen from West Virginia. *Journal of Petroleum Chemistry*, 2015, Volume 16, 200-215.
  - b. **When possible, please include a web link to the cited paper or abstract.** Please underline student authors in listings of your publications and presentations.
- E. The proposal should be as concise as is consistent with an adequate presentation and justification of the research idea. The PRF Committee has set **a limit of 4,000 words**, double-spaced, in 12-point font (**Times Roman, Arial, or Courier**) with one-inch margins for the scientific text of proposals; this word limit excludes abstract, figures, and references. **Proposals exceeding this length will be denied without review.**
- F. A 100-word statement of petroleum-relevance (*i.e.*, How is the proposal "fundamental research in the petroleum field"?) is required as part of the proposal submission. This statement is entered in the online submission form before the PDF of the proposal is uploaded.
- G. Do not attach preprints or reprints of articles to proposals. Information that has not yet been published may be included in the text of the proposal. Updates regarding pending proposals with other agencies should be forwarded to your ACS PRF Program Manager. No additional material may be submitted while a proposal is under review.

**ACS PRF UNDERGRADUATE RESEARCH GRANTS  
ELIGIBILITY, TERMS, AND CONDITIONS**

- 1) ACS PRF Undergraduate Research grants are made to non-profit institutions for regularly appointed scientists/engineers whose research may be sponsored by ACS PRF in accordance with subsection (a) of Article SECOND of the Agreement of Transfer of Trust creating the American Chemical Society Petroleum Research Fund (Transfer Agreement), dated October 25, 2000. Only faculty with appointments in departments which do not offer a doctoral degree are eligible for Undergraduate Research grants. In addition, applicants must meet the following three criteria. It is assumed that tenured or tenure-track faculty meet these criteria.
  - a) The non-profit institution submitting the proposal must certify that the individual listed as a principal investigator on the cover page qualifies as a principal investigator under the institution's policies.
  - b) In view of the long-standing goal of The ACS Petroleum Research Fund to involve undergraduate students in research, the principal investigator must be eligible to serve as the sole formal, official supervisor of undergraduate students.
  - c) The term of appointment of each principal investigator must promise reasonable continuity of service. The appointment should continue at least through the period of funding requested in the proposal.
- 2) ACS PRF Undergraduate Research grants are \$70,000 for a three-year period. This amount is exclusive of any added research supplements that might be recommended and authorized to further assist the principal investigator. ACS PRF grants do not include a contribution to institutional overhead or administrative charges. Shifts in budget category allocations require **prior approval** of ACS PRF.
- 3) The following limitations apply and do not change as a result of time extensions:
  - a) The budget may include a contribution to the principal investigator's summer salary, with an upper limit of \$8,000 per grant year, **including benefits** and the salary of the co-PI, if any, to a maximum of \$24,000. Summer salaries or contributions thereto are **not** provided for principal investigators in colleges or universities outside of the United States and its possessions.
  - b) Except for field work, travel expenses (including scientific meetings) shall not exceed \$2,000 per grant year, or \$6,000 total.
- 4) ACS PRF Undergraduate Research grants **must** be used to support undergraduate students **in each year** of the funded research. M.S.-seeking graduate students can be supported with salaries or stipends, but only if undergraduates are also supported by this grant. Funds may **not** be used for tuition or to support post-doctoral associates, doctoral students, laboratory technicians, contractors, consultants or visiting faculty.
- 5) The institution, by acceptance of this grant, provides assurance that support normally provided by the institution for research of the faculty member will not be diminished.
- 6) At the end of each grant year, the grantee will submit a financial report, a report of progress, and a personnel statement. Of the support given, funds remaining at the end of each grant year may be carried forward into the next in the same budget category. Upon expiration of the grant, any funds remaining must be returned to ACS unless a time extension has been authorized by the ACS Petroleum Research Fund. Time extensions may be approved for no more than two years beyond the original grant period, provided reporting requirements are up to date.
- 7) The Transfer Agreement, wherever applicable, and more specifically subsections (d), (e) and (f) of the Article SECOND thereof shall be complied with by the grantee institution accepting an ACS PRF grant. The reports required by said subsection (d), the publications required by said subsection (e), and a certified copy of any instrument of dedication required by subsection (f) of Article SECOND shall be submitted to the American Chemical Society by the grantee institution. A copy of said Transfer Agreement is attached hereto, is incorporated by reference, and wherever applicable shall be binding upon both the American Chemical Society and the grantee institution.
- 8) In order to comply with the precise requirements of subsection (e) of said Article SECOND of the Transfer Agreement, each publication prepared in connection with an ACS PRF grant, shall make acknowledgment for the support of this research to the donors of the American Chemical Society Petroleum Research Fund, in the following manner: "Acknowledgment is made to the Donors of the American Chemical Society Petroleum Research Fund, for support (or partial support) of this research."
- 9) **In compliance with subsection (f) of said Article SECOND of the Transfer Agreement, any patent which is taken out by or on behalf of the principal investigator or the grantee institution shall be dedicated to the public, royalty free.**
- 10) Acceptance of an ACS PRF Undergraduate Research grant will be conditioned upon agreement by the grantee institution that in the event the principal investigator is unable for any reason to conduct the research proposed, the funds, if previously paid by the American Chemical Society, shall, upon demand, be returned in full to the Society, and, further, that in the event the principal investigator is unable for any reason to continue with the research after it has commenced, this grant shall be terminated forthwith and the unexpended and unencumbered balance of any funds theretofore advanced shall be returned to the Society.